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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,582	03/10/2004	Jian-Ku Shang	ILL09-029-US	4720
43320                      7590                      09/04/2008 EVAN LAW GROUP LLC 600 WEST JACKSON BLVD., SUITE 625 CHICAGO, IL 60661				
EXAMINER				
GRAY, JILL M				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
09/04/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/797,582

## Applicant(s)

SHANG ET AL.

## Examiner

Jill Gray

## Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 28-31, 33, 34 and 45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-31, 33, 34 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Allowable Subject Matter***

1. The indicated allowability of claims 28-45 is withdrawn in view of the newly discovered reference(s) to Cai et al., 6,680,279 B2, Thierauf et al., US 2006/0099391 A1 and 2006/0078712 A1, and Sowards et al., 3,518,206. Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 28-31, 33-34, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cai et al., 6,680,279 B2 (Cai) in view of Thierauf et al, US 2006/0099397 A1 and US 2006/0078712 A1 (referred to collectively as Thierauf) or Sowards et al., 3,518,206 (Sowards).

Cai discloses fibers having a ceramic coated thereon, wherein the ceramic is of the type contemplated by applicants such as  $\text{Al}_2\text{O}_3$  and can have a high surface area. See entire document, and for example abstract, column 3, lines 5-6. In addition, Cai discloses that the ceramic may further comprise palladium, as required by claim 31. See column 3, line 56. Cai discloses in Example 1 that the ceramic has a surface area of  $150 \text{ m}^2/\text{g}$ , but does not specifically disclose a surface area within the instant claimed range.

Thierauf and Sowards each teach photocatalytically active ceramics comprising at least one member selected from the group consisting of  $\text{Al}_2\text{O}_3$ ,  $\text{ZrO}_2$ , and  $\text{MgO}$ , and

teach that that their ceramics have a BET surface area that can be as high as 200 m<sup>2</sup>/g, per claims 28-29 and 33-34. See Sowards, entire document, and for example, column 7, lines 55-65, and Thierauf, entire documents, and for example, '712, [0011], [0032], '397, [0011], [0023], [0038].

The prior art clearly establishes that fibers coated with high surface area ceramics are known and that said ceramics can have a BET surface area as high as 150 m<sup>2</sup>/g (Cai) or 200 m<sup>2</sup>/g (Thierauf and Sowards). The combination of a ceramic coated on a fiber wherein the ceramic has a BET surface area of 200 m<sup>2</sup>/g or higher as required by present claims 28-29, 33-34, and 45, would have been obvious to one having ordinary skill in the art at the time the invention was made because the skilled artisan could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Regarding claim 30, it is the examiner's position that it would have been obvious to one having ordinary skill in this art to arrive at the optimum proportion by weight of the ceramic coated fiber requiring no more than experimentation of an obvious nature.

Therefore, the combined teachings of Cai and Thierauf or Sowards would have rendered obvious the invention as claimed in present claims 28-31, 33-34, and 45.

No claims are allowed.

#### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jill Gray  
Primary Examiner  
Art Unit 1794

/Jill Gray/  
Primary Examiner, Art Unit 1794  
28-31, 33-34, 45